# CONSTRUCTION PLANS FOR:

# IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
# CREP WETLAND PROJECT
# CREP SITE GUT813207B
# GUTHRIE COUNTY
# FEBRUARY 2017

SCALES: As Noted

| INDEX OF SHEETS | |
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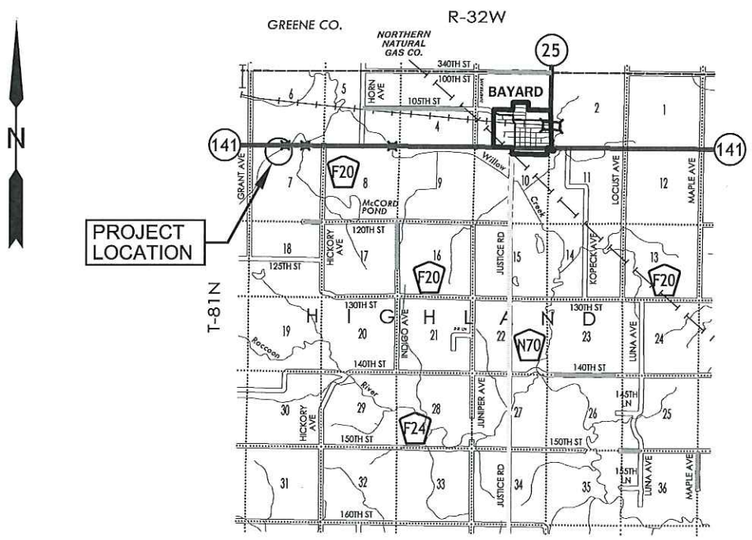


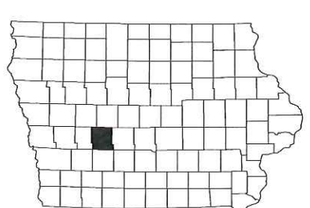

LOCATION MAP SCALE
0 1 2 3
SCALE IN MILES

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811

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

LICENSED PROFESSIONAL ENGINEER TROY J. GROTH 14450 IOWA

TROY J. GROTH, P.E. #14450 02/23/2017 DATE

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2017.

PAGES OR SHEETS COVERED BY THIS SEAL: ALL

REV.:

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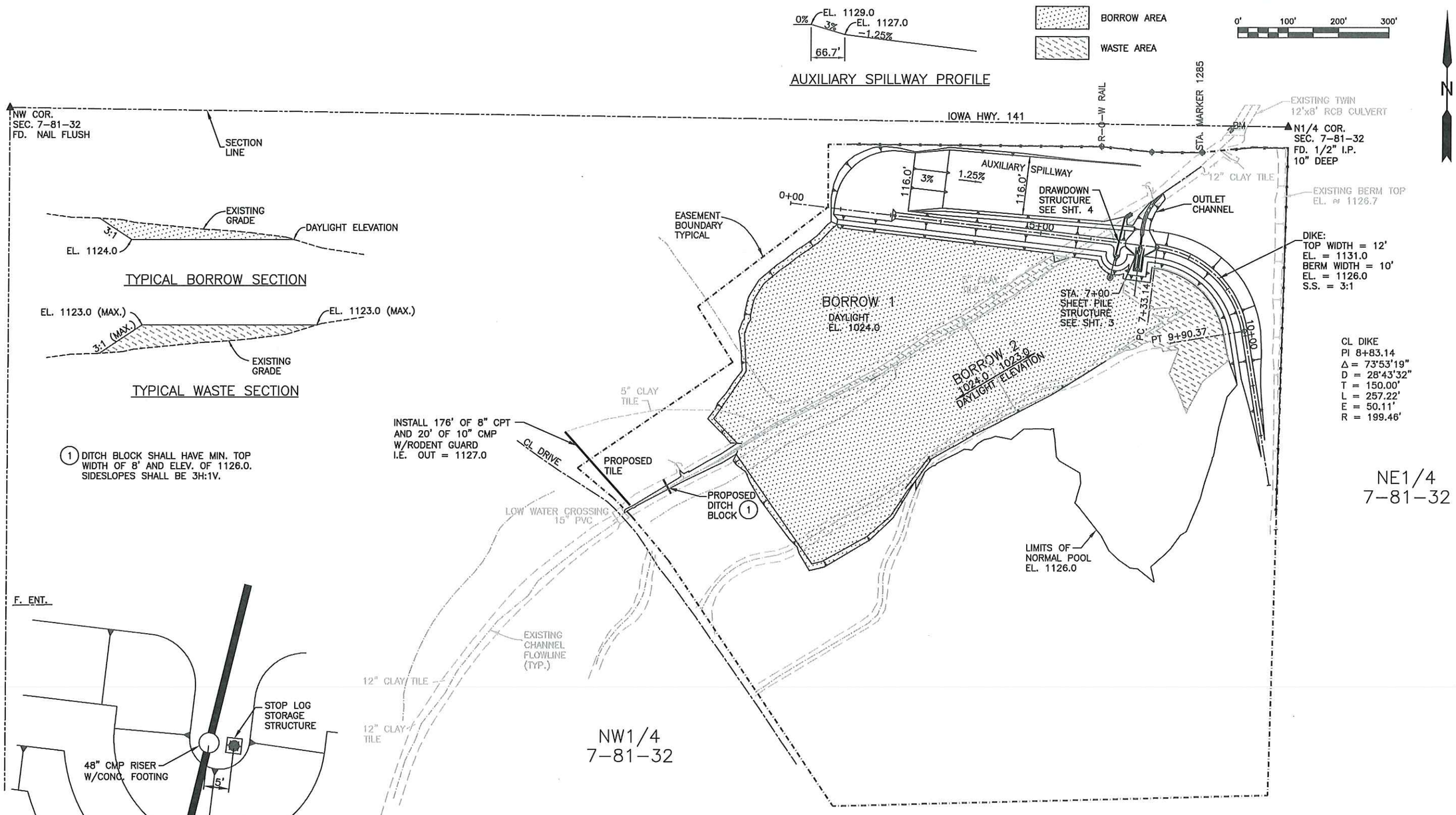
SE PROJECT NO.: 04513 DATE: 02/17 DRAWN BY: TKK REVIEWED BY: TJG APPROVED BY: TJG

CLIENT: IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DESCRIPTION: TITLE SHEET







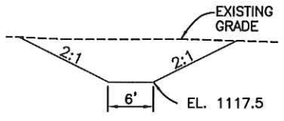
TYPICAL BORROW SECTION



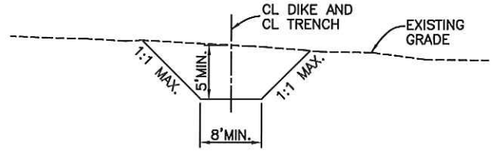

TYPICAL WASTE SECTION

(1) DITCH BLOCK SHALL HAVE MIN. TOP WIDTH OF 8' AND ELEV. OF 1126.0. SIDESLOPES SHALL BE 3H:1V.

STOP LOG STORAGE STRUCTURE LOCATION




OUTLET CHANNEL




DETAILS OF CORE TRENCH

STA. 2+44 TO STA. 10+93

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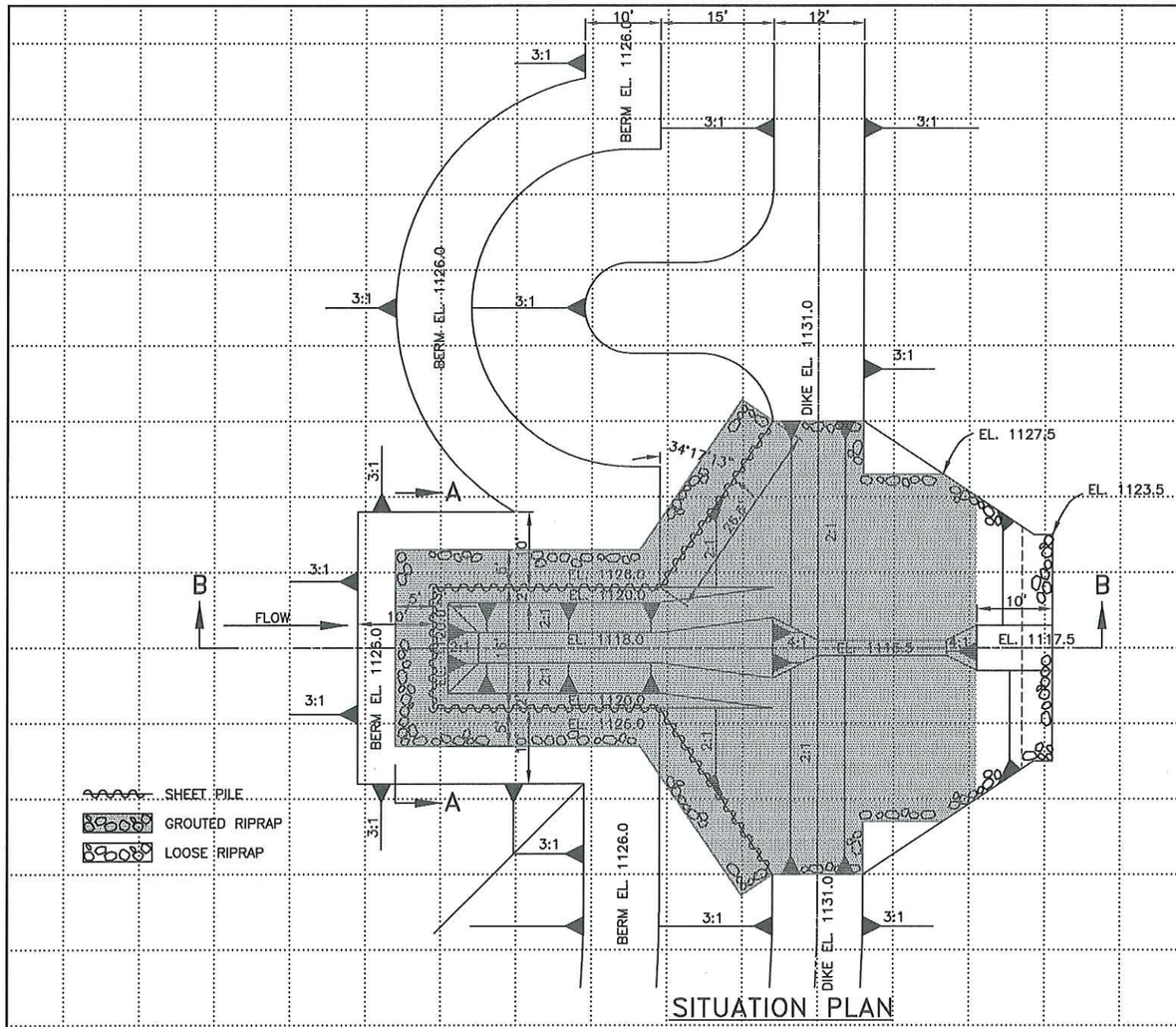
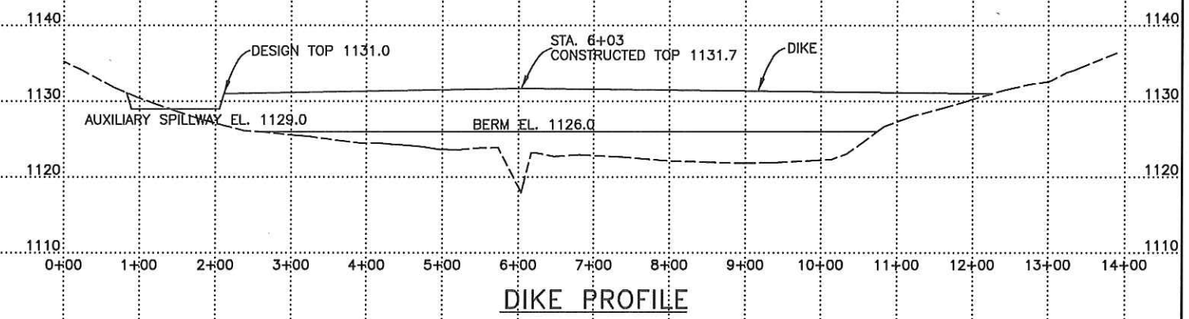
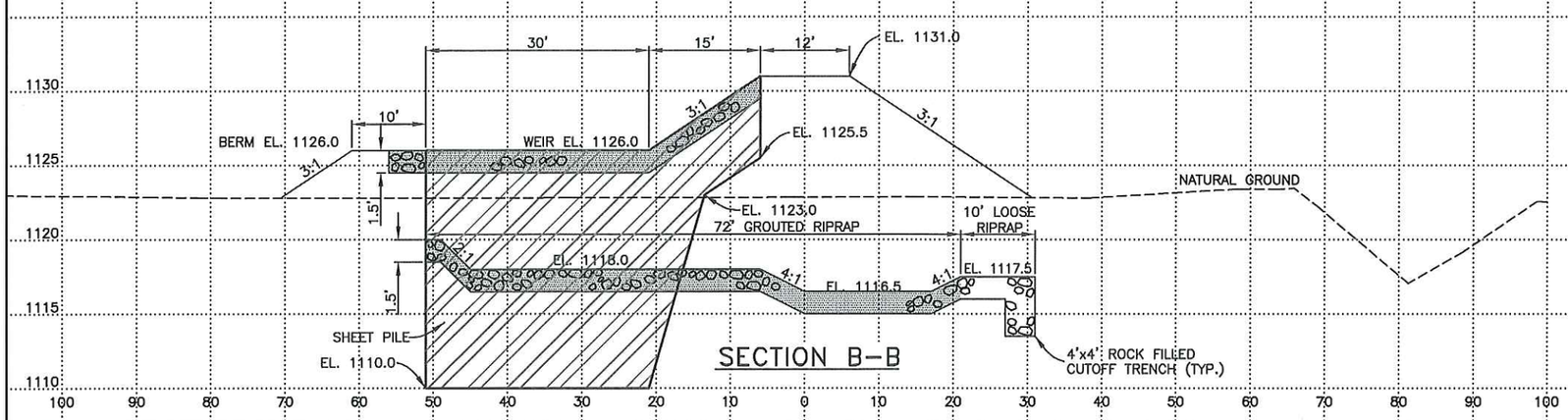


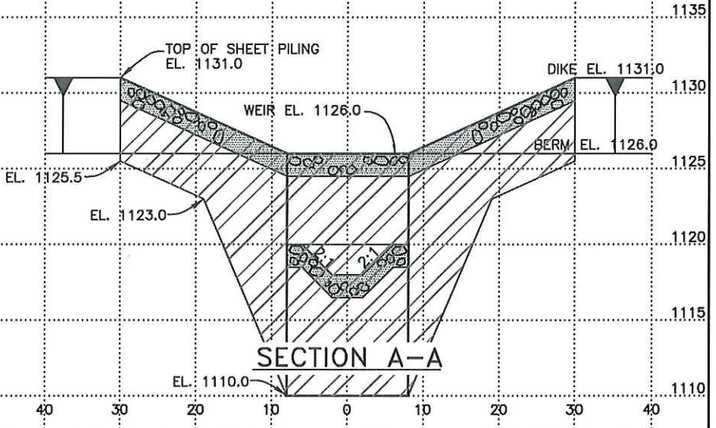

SITUATION PLAN




DIKE PROFILE




SECTION B–B




SECTION A–A

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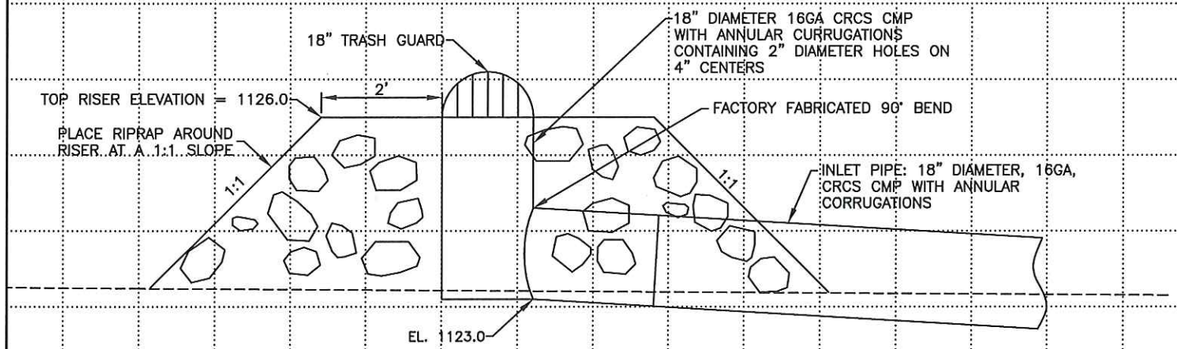
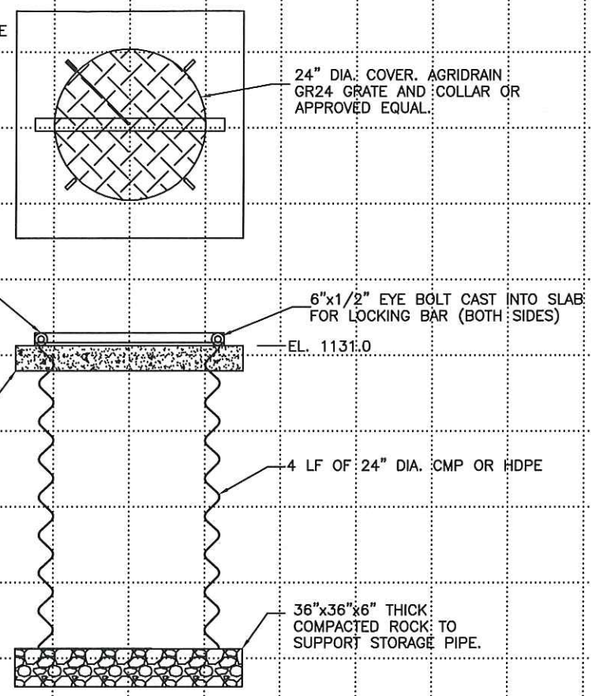



## INLET PIPE RISER

NOT TO SCALE

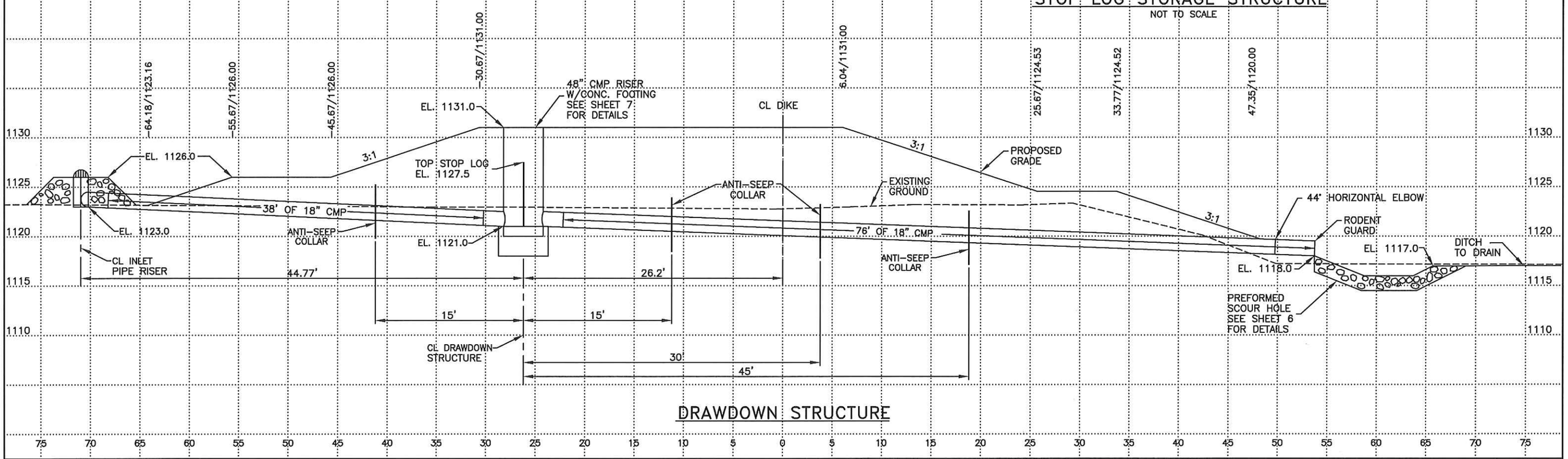
NOTES:

1. INSTALL STOP LOG STORAGE STRUCTURE AT TOP OF DIKE NEAR STA. 6+55.
2. FURNISH PADLOCK IDENTICALLY KEYED TO PADLOCK FURNISHED FOR WATER CONTROL STRUCTURE.

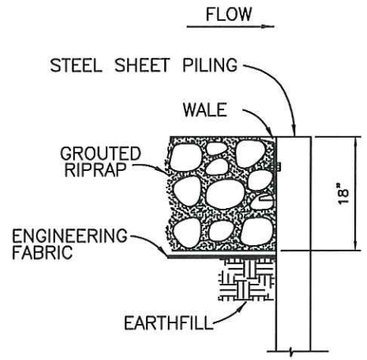



## STOP LOG STORAGE STRUCTURE

NOT TO SCALE

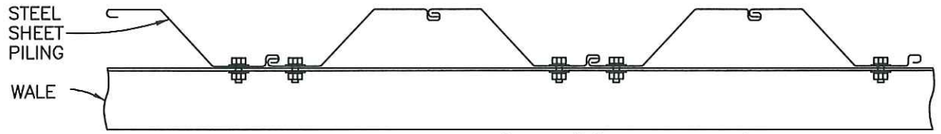



## DRAWDOWN STRUCTURE

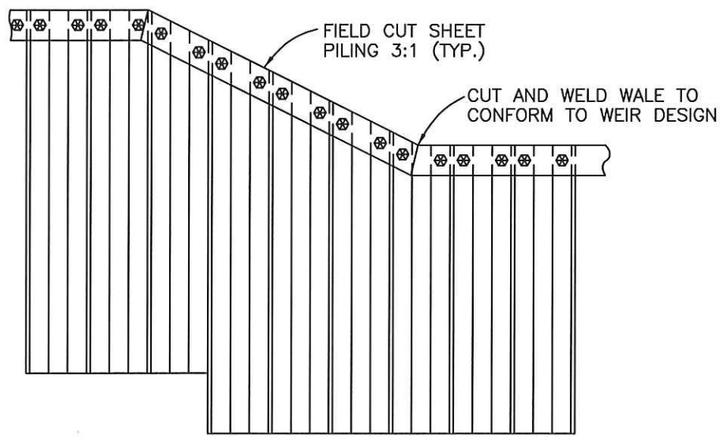



## GROUTED RIPRAP DETAIL

NO SCALE

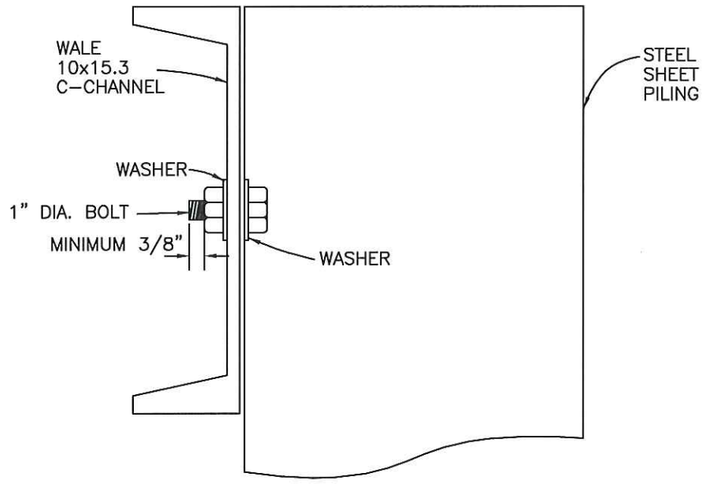



WALE BOLT PLACEMENT (HEAVY "Z" STYLE SHEETS)




## DETAILS OF WALE

NO SCALE




## BOLT DETAIL

NO SCALE

NOTES:
1. ALL BOLTS SHALL BE 1" DIA. W/2 WASHERS. BOLTS SHALL EXTEND AT MINIMUM 3/8" BEYOND NUT.
2. ALL HOLES SHALL BE FIELD CUT 1/16" DIA. LARGER THAN THE BOLTS.
3. 2 BOLTS SHALL BE USED WHEN THE WALE IS PLACED NEXT TO THE SPLICE. 1 BOLT SHALL BE USED WHEN THE WALE IS PLACED OPPOSITE THE SPLICE.

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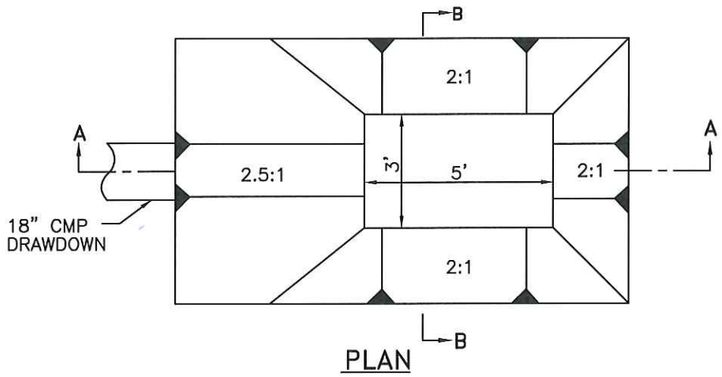
CLIENT: IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

DESCRIPTION: SHEET PILE DETAILS

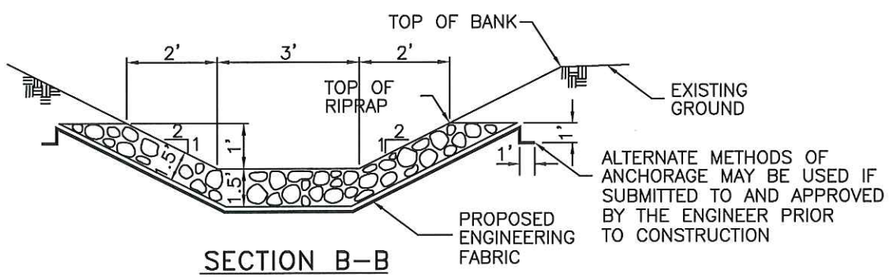



PLAN




SECTION A–A

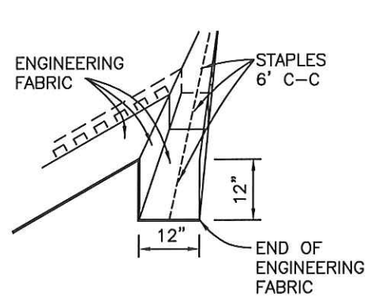
RIPRAP



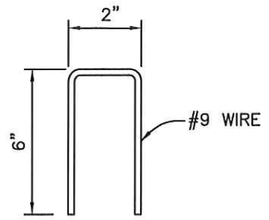

SECTION B–B

## DETAILS OF PREFORMED SCOUR HOLE

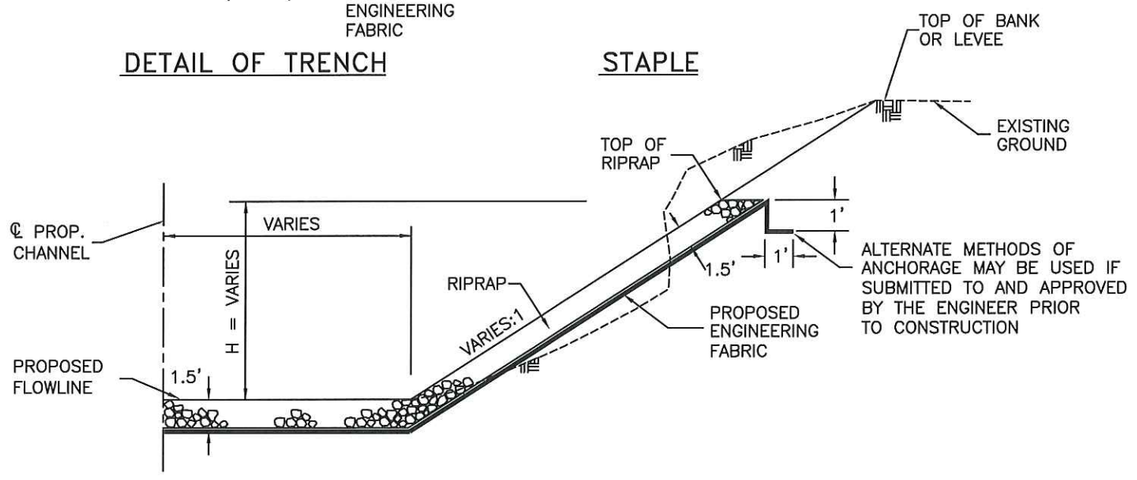
NO SCALE




DETAIL OF TRENCH

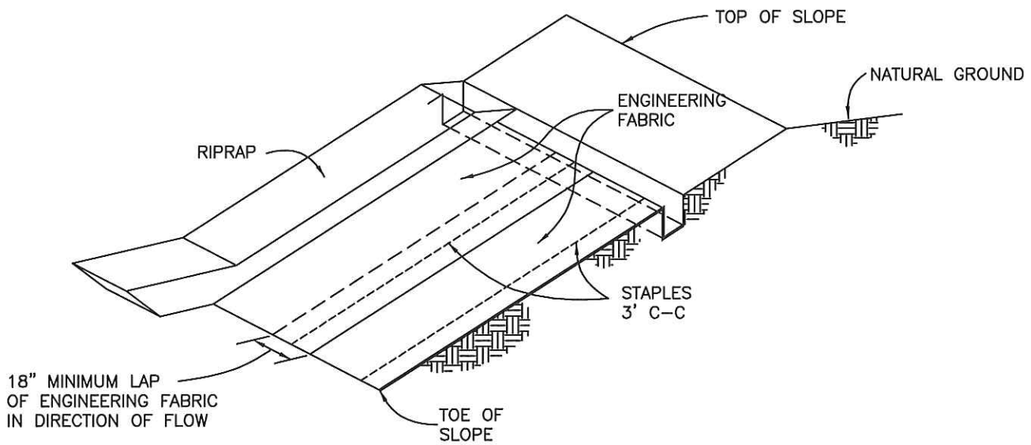



STAPLE




## TYPICAL CHANNEL SECTION

NO SCALE
SYMMETRICAL ABOUT CENTERLINE




EXCAVATE 12"x12" TRENCH ALONG TOP OF RIPRAP. PLACE END OF ENGINEERING FABRIC STRIPS INTO TRENCH WITH STAPLES AS SHOWN. BACKFILL WITH THE EXCAVATED MATERIAL AND COMPACT. THE ENGINEER MAY PERMIT THE USE OF THE WHEELS OF PNEUMATIC–TIRED EQUIPMENT FOR CONSOLIDATING THE TRENCH BACKFILL MATERIAL.

## DETAILS OF PLACEMENT OF ENGINEERING FABRIC

NO SCALE

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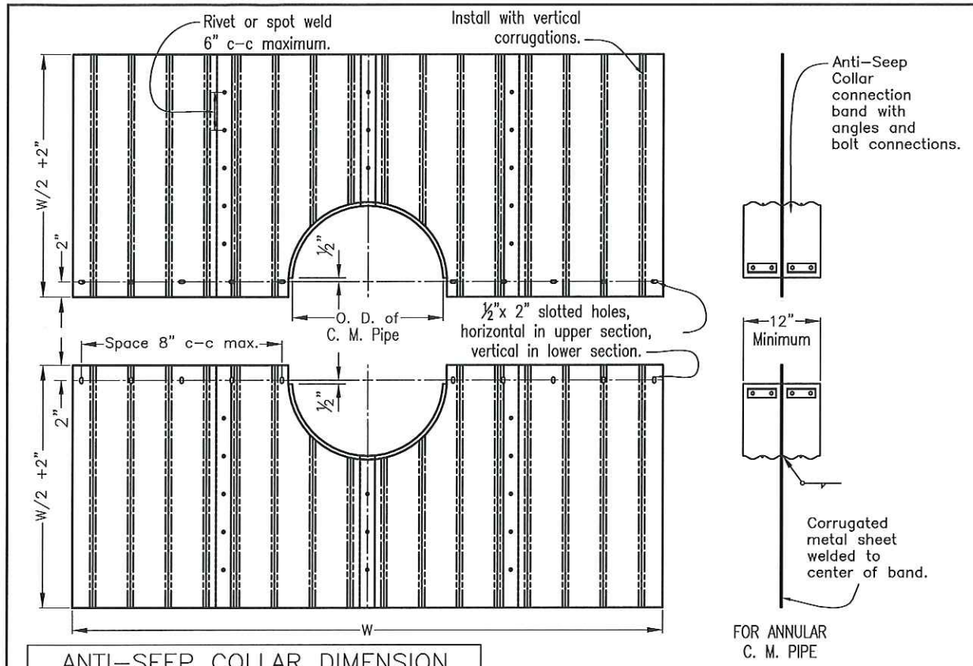



| ANTI–SEEP COLLAR DIMENSION TABLE | | |
|---|---|---|
| Pipe Diam. | No. Used | W (inches) |
| 18 | 4 | 66 |

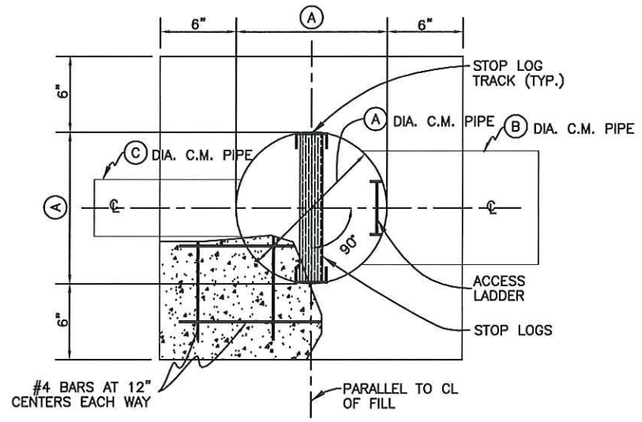
*Anti–Seep Collar dimensions shown may be increased to allow fabrication from standard size sheets.

Anti–Seep Collars for corrugated metal pipe to be connected with angles riveted or spot welded to band and connected with bolts.

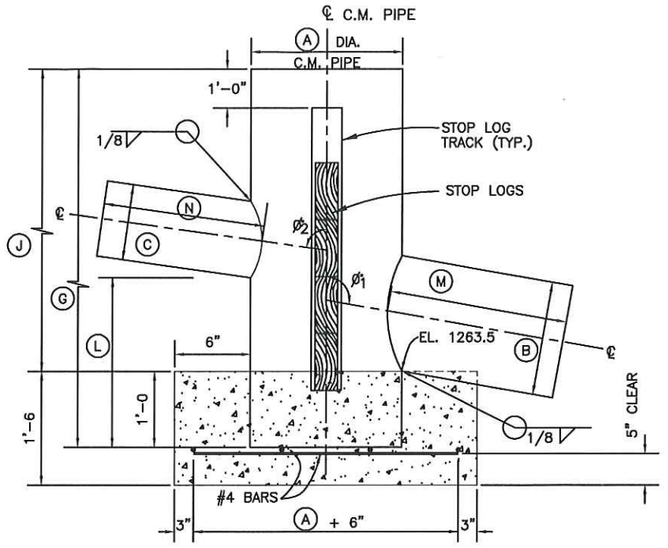
### Materials and Fabrication Requirements

1. Materials and fabrication shall be in accordance with Construction Specification IA–51 – Corrugated Metal Pipe Conduits and the following:
   - A. Sheet material for the anti–seep collar and connection bands shall conform to the requirements specified for the pipe material itself.
   - B. The anti–seep collar sheets shall be corrugated as specified for the corrugated metal pipe.
   - C. The anti–seep collar and connection bands shall be of equal thickness. They may be the next thickness lighter than that of the pipe to which attached, but not lighter than nominal 16 gage nor heavier than nominal 12 gage.
   - D. Metal sheets shall be fastened together to form anti–seep collar halves with either rivets or resistance spot welds as shown on this drawing.
   - E. Anti–seep collar connection bands shall be as shown on this drawing. Bands with annular corrugations shall be corrugated as specified for annular pipe.
   - F. Connection angles and connection bolts shall be as specified for coupling bands except,
     (1) The length of each angle shall be 1/2 the bandwidth minus 1".
     (2) 4 bolts (2 each side) are required.
   - G. The anti–seep collar halves shall be welded to the connection band as shown on this drawing. All welds shall be treated as specified for "Repair of Damaged Coatings".
   - H. The anti–seep collar halves shall be slotted as shown on this drawing for connecting together with ⅜" diameter bolts. The bolts shall be of quality equal to the connection bolts and shall be galvanized or cadmium plated.
2. Shop assemble match and mark anti–seep collar halves.
3. Apply heavy coating of bituminous mastic or ⅜" x 7" neoprene gasket between anti–seep collar halves to produce watertight joints. Bituminous mastic shall also be applied between the connecting band and pipe to produce a watertight connection.

## ANTI–SEEP COLLAR FOR CORRUGATED METAL PIPE




PLAN




SECTION ON CENTERLINE

## DETAILS OF WATER CONTROL STRUCTURE

Not to Scale

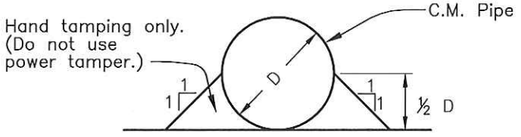
Notes:

Water Control Structure to be shop fabricated. After welding, damaged coatings shall be repaired as specified in Construction Specification 51.

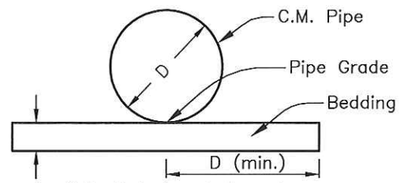
Minimum (M) Dimension
B≤36" M=2'–1 ½"
B>36" M=4'–1 ½"

Minimum (N) Dimension
N=2'–1 ½"

Note
Begin backfill immediately after pipe has been placed.




## CORRUGATED METAL PIPE BACKFILL DETAIL




Excavate 2 to 3 inches below pipe grade. Then backfill with damp friable soil free from lumps and raked or graded to a true plane before placing C.M. Pipe. No compaction of bedding is required.

## CORRUGATED METAL PIPE BEDDING DETAIL

### TABLE – DIMENSIONS AND MATERIAL

| | Dimensions |
|---|---|
| (A) | 48" |
| (B) | 18" |
| (C) | 18" |
| (G) | 11'–0" |
| (J) | 10'–0" |
| (L) | 1'–0" |
| (M) | 2'–1 3/4" |
| (N) | 2'–1 3/4" |
| Sheet Thickness for (A) Dia. | 0.079" |
| Corrugations for (A) Dia. | 3"x1" |
| Sheet Thickness for (B) Dia. | 0.064" |
| Corrugations for (B) Dia. | 2 2/3"x1/2" |
| Sheet Thickness for (C) Dia. | 0.064" |
| Corrugations for (C) Dia. | 2 2/3"x1/2" |
| | |
| MATERIAL ITEMS | |
| Ø DEGREES – ANGLES Ø1 | 92°12'17" |
| Ø2 | 87°32'18" |
| Slope of (B) dia. pipe in ft./ft. | 0.039 |
| Slope of (C) dia. pipe in ft./ft. | 0.063 |
| | |

### VERTICAL INLET BASE QUANTITIES

| DIMENSION (in.) (A) | CONCRETE CU. YDS. | STEEL REINFORCEMENT #4 BAR | | |
|---|---|---|---|---|
| | | LENGTH EACH BAR | NUMBER OF BARS | TOTAL WEIGHT POUNDS |
| 48" | 1.4 | 4'–6" | 12 | 36 |
| | | | | |